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Homeless deaths in Istanbul, Turkey

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Abstract

We retrospectively analyzed the autopsy records of the Council of Forensic Medicine during the 5-year period between the years 2000 and 2004 to contribute to the efforts targeted at lowering death rate in the milieu of homelessness by documenting the current status of this group particularly in terms of mode of death. Two hundred and nine of the 229 cases (91.27%) were males and remaining 20 were females. The preponderance of male cases in our autopsy population was also detected in homeless population. Most of the cases were in the age group of 40–49 years (64 cases, 27.95%). One hundred and ninety two corpses (83.85%) were found outdoors and only 37 of the cases (16.15%) indoors.

Natural events constituted the cause of death in 138 of the cases (60.26%) and in remainder 91 cases the cause of death was related to an unnatural event (39.74%). In approximately 1/3 of the cases of natural death cases, autopsy revealed the evidence of pulmonary tuberculosis but only in 32 of these cases the tuberculosis was the primary cause of death. The presence of alcohol was found to be significantly associated with the manner of death. Blood alcohol level over 50 mg/100 ml was determined only in 9.42% of natural death cases, whereas it was positive in 61.53% of unnatural death cases. We concluded that immediate precautions targeted at lowering death rate in this population must include health care for preventable natural diseases.
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1. Introduction

High mortality rates were reported in the homeless populations in many autopsy studies.[1–3] It seems that the problem is a global one affecting big cities (metropolitan cities) of both developed and developing countries. In a previous study about the autopsy cases, it has been reported that homelessness is a big problem in Istanbul as well, which is the most crowded city of Turkey.[4]

The age-adjusted mortality rate among the homeless people was reported to be three and half times greater than that of general population.[5] The death patterns detected in homeless population change according to the milieu of the population and it also shows variations from one region to the other. In the previous study[4] which was carried out in Istanbul between the years 1991 and 1995, the majority of the cases were detected to die from natural reasons (78%). In the other studies of the similar population in different countries, the findings were different in terms of the causes of the death. For example in Hamburg, 43.8% of those were due to unnatural deaths and in San Francisco the majority (52.2%) were due to drug poisoning.[6,7]

The municipality of Istanbul takes precautions in order to prevent deaths particularly in winter, but this type of social problem still exists in this very crowded city. In order to improve the public health programs (not only providing shelters), a better understanding of the causes and

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circumstances of deaths in that group is needed. In this retrospective study, we aimed to contribute to the efforts targeted at lowering the number of deaths in the milieu of homelessness by documenting the current status of the group particularly in terms of mode of death. We also aimed to show the importance of determination of mode of death in homeless population, by that way, to help how to improve the living circumstances for them in order to lower the number of deaths.

2. Material and methods

This is a retrospective study based on the autopsy records of the Council of Forensic Medicine which is responsible for post-mortem examination of all forensic deaths in Istanbul. Because of the fact that almost all deaths among homeless people are regarded as suspicious and sent to the Council for autopsy, the autopsy records of the Council, at the same time, reflect the death patterns of those in Istanbul.

We retrospectively analyzed the autopsy records of the Council during the 5-year period between the years 2000 and 2004. The population that was selected for the study comprised of residents who were homeless and died in Istanbul. Homelessness of the cases was determined and reported to us by the police or gendarme. The cases with little or deficient information about the housing status were excluded. The rest ($n = 229$) were assessed for their demographic features, cause of death, manner of death and toxicological findings.

3. Results

Two hundred and nine of the 229 cases (91.27%) were males and the remaining 20 were females. The propenderance of male cases in our autopsy population was also detected in homeless population. There were no decedents younger than 10 years of age and the number of the cases in the age group of 70 and over was the lowest ($n = 10$, 4.37%). Most cases were in the age group of 40 and 49 (64 cases, 27.95%). Table 1 shows the distribution of the cases according to age and gender. In cold months there seems to be an increase in the number of the cases (59.38% of cases in fall and winter). The distribution of the cases according to seasons and years is shown in Tables 2 and 3.

One hundred and ninety two corpses (83.85%) were found outdoors and only 37 of the cases (16.15%) were indoors. The majority of the cases found outdoors

Table 2
The distribution of the cases according to years

Years	Number	%
2000	45	19.65
2001	37	16.16
2002	40	17.47
2003	51	22.27
2004	56	24.45
Total	229	100.00

Table 3
The distribution of the cases according to seasons

Months	Number	%
December	22	9.61
January	34	14.85
February	52	22.71
March	17	7.43
April	15	6.55
May	15	6.55
June	14	6.11
July	11	4.80
August	11	4.80
September	15	6.55
October	16	6.99
November	7	3.05
Total	229	100.00

Table 4
The distribution of the cases according to location of corpse

Place of corpse	Number	%
Street, alley	95	41.49
Public park	31	13.54
Under bridge	10	4.36
Public toilet	1	0.44
Railway	8	3.49
Abondoned buildings	34	14.85
Graveyard	3	1.31
Coach station	2	0.87
Forest	4	1.75
Coast	8	3.49
Side of the motorway	29	12.66
Open land	4	1.75
Total	229	100.00

were in the streets and public parks. Distribution of the cases according to place of corpse is shown in Table 4.

In approximately 2/3 of the cases, the poor body hygiene showing the findings of self-neglect together with parasitic infestation was prominent. All these findings were attributed to the inappropriate living conditions and lack of health care.

Table 1
Distribution of the cases according to age groups and gender

	11–20 years	21–30 years	31–40 years	41–50 years	51–60 years	61–70 years	>70 years	Total	%
Male	3	24	41	62	43	28	8	209	91.27
Female	2	6	5	2	2	1	2	20	8.73
Total	5	30	46	64	45	29	10	229	100.00

Table 5
The distribution of the cases according to the cause of death

Cause of death	Number	Percentage
Unnatural		
Acute alcohol intoxication	18	7.86
Traffic accident	16	6.99
Stab wound	16	6.99
Railway fatalities	9	3.93
Fall from height	8	3.49
Drowning	6	2.62
Blunt cranial trauma	6	2.62
Intoxication (drug/narcotic)	5	2.19
Burns	3	1.31
Firearm fatalities	2	0.87
Strangulation by ligature	1	0.43
Hanging	1	0.43
Total	91	39.73
Natural		
Pulmonary tuberculosis	35	15.28
Unexplained (mostly decomposed)	31	13.54
Cardiovascular disease	29	12.66
Pneumonia	29	12.66
Neoplasm	4	1.75
Peritonitis resulting from ulcer perforation	3	1.32
Hypothermia	2	0.87
Intracerebral hemorrhage	2	0.87
Aneurismal rupture of aorta	1	0.44
Hepatic failure	1	0.44
Septicemia	1	0.44
Total	138	60.27

In toxicologic analysis, ethanol with a level of 50 mg/dl and over was detected in 60 of the cases. In the nine of those cases, the ethanol level was fatal. The alcohol detected in 9 cases was methanol. In all methanol cases, the level of methanol was fatal. Mean ethanol level in those 9 fatal intoxication cases was 457 mg/dl, ranging between 342 and 568.

Natural events were the main cause of death with 138 cases (60.26%) and the remaining cases of 91 was found to die due to unnatural event (39.74%). In approximately one third of the cases that died from natural reasons, the autopsy investigation revealed some evidence of pulmonary tuberculosis but only in 32 of these cases, the tuberculosis was the primary cause of death. The causes of death of all cases are shown in Table 5. There was no record about the HIV status of the cases.

The presence of alcohol was found to be significantly associated with the manner of death. Blood alcohol level over 50 mg/100 ml was determined only in 9.42% of the cases with natural death, whereas it was positive in 61.53% of the ones with unnatural death. In the eighteen of those cases, alcohol was the primary cause of death with acute alcohol toxicity.

4. Discussion

In retrospective analysis of all autopsy records of the Council between the years 2000 and 2004, there were 229 cases meeting the selection criteria for homelessness (males; 209, females; 20). Homeless deaths constituted the 1.46% of all forensic deaths (15 646) during that period. The majority of the cases were male in our study and this figure is in accordance with the previous study carried out in Istanbul. Mean age reported in other studies of this population is also similar to our findings. It was reported to be 44.5 in Hamburg, 46 in Fulton County, 41 in San Francisco and 44 in our study.[6–8] In the previous study in Istanbul,[4] most cases were found to accumulate in the 31–50 age groups and it seems that this figure has not changed much in Istanbul.

The distribution of the cases according to years shows an increase in the number in 2003 and 2004. The total number of homeless cases also increased comparing to the previous study (between the years 1991 and 1995). It was 129 in that study[4] whereas 229 in the current study. This increase itself shows the necessity of efforts to improve life conditions of this group.

The percentage of cases found outdoors was reported to be 55% in Atlanta, 35% in San Francisco, whereas it was 83.85% in our study.[7,9] This high percentage of cases found outdoors was also detected in the previous study[4] carried out in Istanbul (75%). These high percentages of the cases living outdoors are open to every danger both environmental and criminal. This reality must be taken into consideration when planning shelters especially in cold seasons.

In contrast to the findings of Philedelphia study[5] (53% of deaths occured during summer months), there seems to be an increase in the number of deaths in cold months in our homeless population (59.38% of cases in fall and winter). All those show that the lack of shelters plays an important role in death process of this population in cold months in Istanbul.

In 60.27% of the cases, natural diseases played important role in death of this group. In this group, the diseases related to the pulmonary system constituted the majority (64 of 128 cases). The figure was different in the other studies; in Hamburg, 43.8% were unnatural deaths and in San Francisco, the majority (52.2%) of deaths were due to drug poisoning.[6,7] Due to bad living conditions and lack of health care, pulmonary tuberculosis was very widespread in our homeless population and it was the primary cause of death in 35 cases. Thus, these preventable natural diseases (particularly tuberculosis) must be taken into consideration in planning the strategies against this problem in Istanbul (see Table 6).

Table 6
The relationship between alcohol and cause of death

Cause of death	Blood alcohol level over 50 mg/dl				% of positivity in total cases
	Positive	%	Negative	%	
Natural	13	9.42	125	90.58	5.68
Unnatural	56	61.53	35	38.47	24.45
Total	69		160		30.13

Only in 5 cases deaths were attributed to drugs other than alcohol in our study. In 3 of them, the reason was heroin overdose and antidepressant intoxication was accused in one. Volatile substance abuse was detected also only in one case. Low incidence of drug abuse in our homeless population is different from other countries.[7]

We determined that deaths in 18 (7.86%) of the 229 were alcohol-related. This figure is also different from the other studies. In Atlanta, 28 (70%) of 40 deaths were alcohol-related.[9] But, the presence of alcohol was found to be significantly associated with the manner of death. Blood alcohol level over 50 mg/100 ml was determined only in 9.42% of natural death cases, whereas it was positive in 61.53% of unnatural death cases. In 18 of these cases, alcohol was the primary cause of death via acute alcohol toxicity. We believe that alcohol played an important role in the other cases of unnatural deaths (e.g. traffic accidents).

5. Conclusion

Our study makes it clear that the distribution of our homeless population is different from those of other countries both in terms of manner of death and drug-alcohol abuse. But it is also clear that homelessness is an increasing problem of our crowded city, Istanbul. Immediate precautions targeting to lower death rate in this population must include health care for preventable natural diseases.

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